

Buderus SB Series Stainless Steel Condensing Boilers

High efficiency commercial boiler solutions with up to 98% efficient with inputs of 563 to 5443 MBH



BOSCH

Invented for life



The best of both. The new Buderus SB WS Series by Bosch.

New for 2013!

Bosch introduces the Buderus SB line of stainless steel commercial condensing boilers.

Introducing the SB Series.

Our newest commercial boiler line is being introduced under the Bosch brand, while maintaining a strong identity with the Buderus name as the product category. The new Buderus SB series of high-efficiency condensing boilers feature design flexibility for retrofit and new construction projects. The high mass design is tailored to fully meet space heating retrofit applications. This series can be used with multiple fuels including natural gas, propane or heating oil.

The boiler insulation comes pre-installed and convenient top connections allow easy access to piping for reduced installation effort. Project costs are reduced due to simplified piping – a high water content heat exchanger requires no minimum flow rate, which eliminates the need for a costly dedicated boiler circulator.



New from Bosch

Buderus SB series condensing gas commercial boilers - perfect for large applications. Bosch is a global innovator providing sustainable business partnerships based on trust, values and quality.





The secondary heating surfaces are long and extremely large in order to ensure optimal heat transfer and a high degree of condensation.

With inputs ranging from 563 to 5443 MBH, the new SB Series has an increased maximum operating pressure to 80 psi, and a 10 year non-prorated limited warranty. Bosch is the perfect partner to offer a broad spectrum of commercial boiler applications.

Condensing Boiler Technology

Condensing boiler technology is the most efficient, environmentally friendly form of fuel heating available today. Condensing technology recovers the condensation heat retained latently in flue gases – part of the energy that normally disappears up the chimney in other heating systems. Thanks to lower fuel consumption and lower heating costs, condensing boilers usually pay for themselves in only 2 to 5 years.

Additionally, a modern condensing heating system increases the value of the building as well as quality of life by reducing emissions. Condensing technology offers an intelligent, easy-to-install solution to rising

fuel costs. High efficiency condensing equipment achieves qualifying points for LEED certification of commercial buildings.

Condensing Technology Improves Energy Utilization By Up To 15%

With condensing technology, the water vapor contained in the flue gases condenses on the cooler heat exchanger surfaces of the boiler, transferring heat into the boiler water. Large heat-transfer surfaces, a counter-flow heat exchanger design, and cold return water temperatures together optimize condensation opportunities.

The heat released from condensation is transmitted directly into the boiler water, minimizing thermal flue gas losses. The seasonal efficiency of the Buderus SB Series Condensing Boilers can reach up to 98%, reducing heating costs by up to 20% in comparison with conventional heating

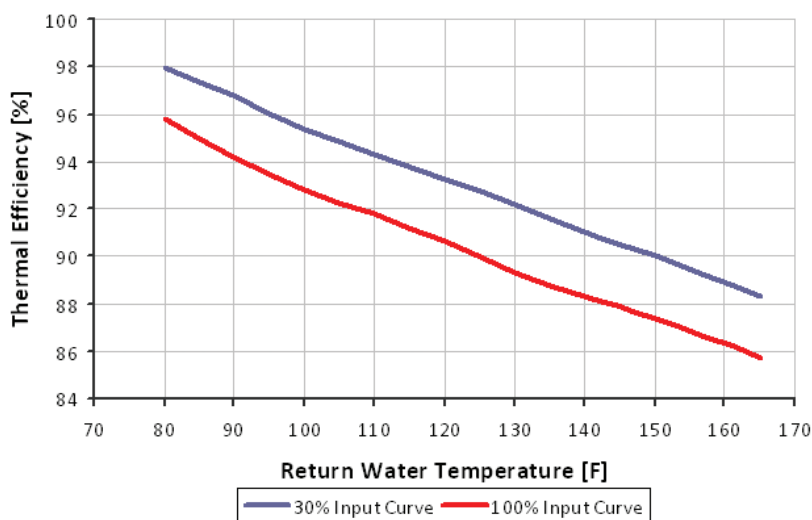
Reduced installation cost and complexity:

- ▶ Top connections for easy access to piping
- ▶ pre-installed boiler insulation
- ▶ One package for the jacket pack
- ▶ Same base construction of all models
- ▶ Simple piping, no primary/secondary piping with extra circulator needed

Increased opportunities for specifying

- ▶ Pressure rating up to 80 psi
- ▶ Wider output range
- ▶ Increased warranty up to 10 years
- ▶ Multi fuel options available: NG, LPG, low sulfur oil and heating oil type 2

Boiler Efficiency Curves

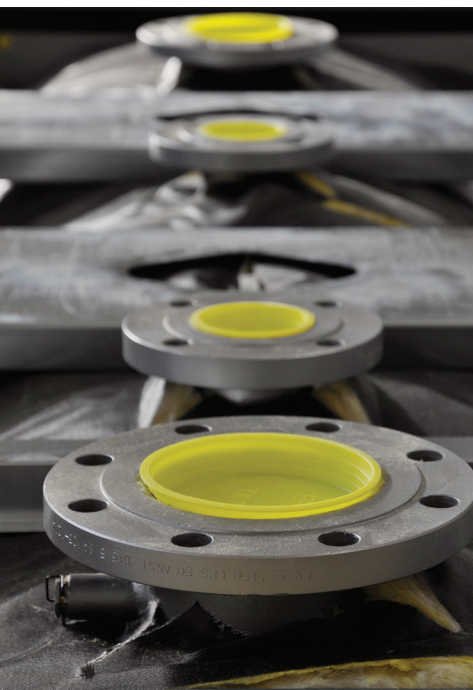


Flexible high mass design for retrofit and new construction projects.

A modulating burner and two return-water connections ensure high energy efficiency & low pollutant emissions.

The SB Series Condensing Boilers have more than exemplary economy to offer. Equipped with a two-staged or modulating forced-draft burner, they achieve extremely low pollutant emissions. High- and low-temperature heating circuit returns to the boiler should be connected separately to achieve higher efficiencies and higher rates of condensation. Buderus condensing boilers are equipped with two return water connections, which allow for separate return flows and optimal efficiencies.

When return-flow temperatures below the dew point of combustion gases are reduced further, even more heat is reclaimed from the flue products. In the SB Series, low flue gas temperatures are ensured by low return water flow temperatures, highly efficient heat exchanger surfaces, two-stage or full modulating burners, and continuous operation. SB Series condensing boilers are ideally suited for direct piping in commercial systems to make maximum use of low return water temperatures. Direct piping reduces complexity, and installation and maintenance costs. Outdoor reset can be done directly through the boiler without the use of costly 3- or 4-way valves or primary/secondary piping.



Multiple Return Connections

Low & medium temperature return connections create maximum heat transfer along the second and third flue passes increasing overall boiler efficiency.

316Ti Advantage

The titanium infused stainless steel heat exchanger is designed for greater strength and longer service life



Bosch is a long-standing, reliable business partner delivering support, products and accessories to the market. Work with one manufacturer for coverage of the entire output range.



Operating features and benefits:

- ▶ Inexpensive installation with comprehensive equipment and simple system technology
- ▶ Large, full-swing openings of the main combustion chamber and fire tube heating surface assure easy inspection and service.
- ▶ No operational requirement with regard to water flow, minimum return temperature or temperature rise through the boiler.
- ▶ The heating circuit flow and low temperature return flow can be connected without any additional equipment, e.g. flow monitors or shunt pumps.
- ▶ Smaller circulators for lower electrical consumption
- ▶ Larger delta T's for improved efficiency

Robotic Welding
for precision, reliability
and durability



Technical Specifications

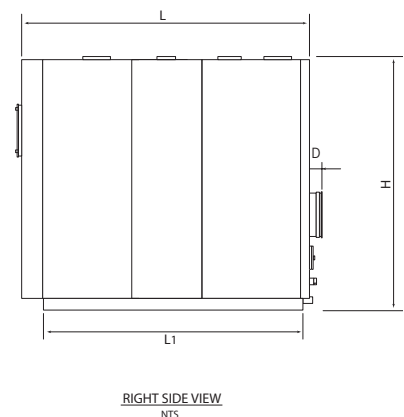
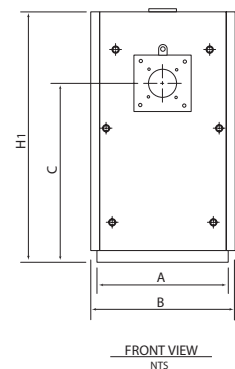
Buderus SB625WS Series

SB625WS Model	160	220	290	370	480	640
Performance Data (Unit of Measure)						
Gas input (MBH [kW])	563 [164.9]	788 [230.9]	1,014 [297.1]	1,314 [385.0]	1,689 [494.9]	2,200 [644.7]
Oil input (GPH)	N/A	5.6	7.2	9.4	12.0	16.0
Gross rated output (MBH [kW])	532 [155.9]	745 [218.3]	959 [281.0]	1,243 [364.2]	1,598 [468.3]	2,081 [609.9]
Gross output (MBH [kW]) @ 104 °F supply / 86 °F return (40 °C / 30 °C)	544 [159.7]	762 [223.6]	990 [290.2]	1,280 [375.2]	1,642 [481.5]	2,190 [642.0]
Gross output (MBH [kW]) @ 176 °F supply / 140 °F return (80 °C / 60 °C)	504 [147.8]	707 [207.3]	920 [269.9]	1,183 [346.7]	1,519 [445.2]	2,025 [593.6]
IBR Net Rating (MBH [kW])	463 [135.7]	648 [189.9]	834 [244.4]	1,081 [316.8]	1390 [407.4]	1810 [530.4]
Boiler horsepower (H.P)	16.3	22.8	29.6	38.2	49.1	65.4
Natural gas combustion efficiency (%)	95.0	95.0	95.0	95.0	95.0	95.0
Natural gas thermal efficiency (%)	94.6	94.6	94.6	94.6	94.6	94.6
General Data (Unit of Measure)						
Boiler category	Condensing					
Heat exchanger construction	Stainless steel					
Heating surface (Sq. Ft [m2])	65.65 [6.1]	94.72 [8.8]	139.93 [13.0]	175.45 [16.3]	234.65 [21.8]	310.00 [28.8]
Maximum allowable working pressure (PSIG [bar])	80 [5.5]	80 [5.5]	80 [5.5]	80 [5.5]	80 [5.5]	80 [5.5]
Water content (Gallons [Liters])	85.3 [323]	95.1 [360]	130.7 [495]	146.6 [555]	196.2 [743]	203.4 [770]
Weight - dry (lbs [kg])	1232 [559]	1276 [579]	1,624 [737]	1,814 [823]	2,612 [1,185]	3,019 [1,370]
Weight - shipping (lbs [kg])	1350 [612]	1380 [626]	1,760 [798]	1,950 [885]	2,900 [1,315]	3,300 [1,497]
Venting category	II, IV					
Operational Data (Unit of Measure)						
Fireside pressure drop (Inch W.C. [mbar])	0.802 [2.0]	1.083 [2.7]	1.284 [3.2]	1.846 [4.6]	2.007 [5.0]	2.208 [5.5]
Required vent connection pressure (Inch W.C. [mbar])	+0.1 - +0.2 [.025 - .498]	+0.1 - +0.2 [.025 - .498]	+0.1 - +0.2 [.025 - .498]	+0.1 - +0.2 [.025 - .498]	+0.1 - +0.2 [.025 - .498]	+0.1 - +0.2 [.025 - .498]
Minimum flow rate (GPM [LPM])	none					
Maximum flow rate (GPM [LPM])	none					
Maximum supply water temperature (°F [°C])	210 [98.8]					
Minimum return water temperature (°F [°C])	none					
Boiler Dimensions Data (Unit of Measure)						
A Base width (Inch [mm])	27 ³ / ₁₆ [690]	27 ³ / ₁₆ [690]	29½ [750]	29½ [750]	31½ [790]	31½ [790]
B Overall width (Inch [mm])	29½ [740]	29½ [740]	33½ [850]	33½ [850]	35 ⁷ / ₁₆ [900]	35 ⁷ / ₁₆ [900]
C Height of burner plate (center line) (Inch [mm])	36 ⁷ / ₁₆ [925]	36 ⁷ / ₁₆ [925]	40 ⁹ / ₁₆ [1030]	40 ⁹ / ₁₆ [1030]	48½ [1235]	48½ [1235]
D Flue depth (Inch [mm])	2¼ [70]	2¼ [70]	2¼ [70]	2¼ [70]	2¼ [70]	2¼ [70]
H Height of water fittings (inch [mm])	52¾ [1340]	52¾ [1340]	57½ [1450]	57½ [1450]	66¾ [1695]	66¾ [1695]
H1 Boiler height (inch [mm])	52 ³ / ₁₆ [1325]	52 ³ / ₁₆ [1325]	56½ [1435]	56½ [1435]	66½ [1680]	66½ [1680]
L Length (inch [mm])	57 ⁵ / ₁₆ [1455]	57 ⁵ / ₁₆ [1455]	64 ³ / ₁₆ [1630]	72 ¹ / ₁₆ [1830]	80½ [2035]	88 [2235]
L1 Base Length (inch [mm])	51 [1295]	51 [1295]	57½ [1470]	65¾ [1670]	73 ³ / ₁₆ [1875]	81 ¹¹ / ₁₆ [2075]

Technical Specifications

Buderus SB745WS Series

SB745WS Model	800	1050	1300	1550
Performance Data (Unit of Measure)				
Gas input (MBH [kW])	3003 [880]	3754 [1100]	4692 [1375]	5443 [1595]
Oil input (GPH)	21.4	26.8	33.5	38.1
Gross rated output (MBH [kW])	2,846 [834.0]	3,529 [1,034]	4,364 [1,279]	5,029 [1,474]
Gross output (MBH [kW]) @ 104 °F supply / 86 °F return (40 °C / 30 °C)	2,738 [802.4]	3,650 [1,070]	4,563 [1,337]	5,293 [1,551]
Gross output (MBH [kW]) @ 176 °F supply / 140 °F return (80 °C / 60 °C)	2,648 [791.2]	3,309 [989.4]	4,137 [1,237]	4,799 [1,434]
IBR Net Rating (MBH [kW])	2,475 [725.3]	3,069 [899.4]	3,795 [1,112]	4,373 [1,281]
Boiler horsepower (H.P)	81.8	109.1	136.3	158.1
Natural gas combustion efficiency (%)	95.0	95.8	96.6	92.5
Natural gas thermal efficiency (%)	94.8	94.8	94.8	92.4
General Data (Unit of Measure)				
Boiler category	Condensing			
Heat exchanger construction	Stainless steel			
Heating surface (Sq. Ft [m2])	426.25 [39.6]	500.52 [46.5]	604.93 [56.2]	670.37 [62.28]
Maximum allowable working pressure (PSIG [bar])	80 [5.5]	80 [5.5]	80 [5.5]	80 [5.5]
Water content (Gallons [Liters])	348.7 [1320]	368.5 [1395]	482.1 [1825]	501.9 [1900]
Weight - dry (lbs [kg])	4430 [2010]	4948 [2245]	6017 [2730]	7230 [3280]
Weight - shipping (lbs [kg])	4830 [2191]	5400 [2449]	6590 [2989]	7950 [3606]
Venting category	II, IV			
Operational Data (Unit of Measure)				
Fireside pressure drop (Inch W.C. [mbar])	2.288 [5.7]	2.529 [6.3]	2.729 [6.8]	2.970 [7.4]
Required vent connection pressure (Inch W.C. [mbar])	+0.1 - +0.2 [.025 - .498]	+0.1 - +0.2 [.025 - .498]	+0.1 - +0.2 [.025 - .498]	+0.1 - +0.2 [.025 - .498]
Minimum flow rate (GPM [LPM])	none			
Maximum flow rate (GPM [LPM])	none			
Maximum supply water temperature (°F [°C])	210 [98.8]			
Minimum return water temperature (°F [°C])	none			
Boiler Dimensions Data (Unit of Measure)				
A Base width (Inch [mm])	37 ⁷ / ₁₆ [950]	37 ⁷ / ₁₆ [950]	42 ¹ / ₈ [1070]	44 ¹ / ₂ [1130]
B Overall width (Inch [mm])	41 ³ / ₄ [1060]	41 ³ / ₄ [1060]	46 ⁷ / ₁₆ [1180]	48 ³ / ₄ [1225]
C Height of burner plate (center line) (Inch [mm])	54 ³ / ₄ [1390]	54 ³ / ₄ [1390]	58 ⁷ / ₈ [1495]	62 ⁵ / ₈ [1590]
D Flue depth (Inch [mm])	2 ³ / ₄ [70]	2 ³ / ₄ [70]	2 ³ / ₄ [70]	2 ³ / ₄ [70]
H Height of water fittings (inch [mm])	75 [1905]	75 [1905]	80 ⁵ / ₁₆ [2040]	85 ³ / ₁₆ [2180]
H1 Boiler height (inch [mm])	74 ⁷ / ₁₆ [1890]	74 ⁷ / ₁₆ [1890]	79 ³ / ₄ [2025]	85 ¹ / ₄ [2165]
L Length (inch [mm])	100 ³ / ₄ [2560]	110 ⁵ / ₈ [2810]	118 ¹ / ₂ [3010]	121 ¹ / ₄ [3080]
L1 Base Length (inch [mm])	94 ¹ / ₂ [2400]	104 ⁵ / ₁₆ [2650]	112 ³ / ₁₆ [2850]	112 ³ / ₁₆ [2850]



Bosch Thermotechnology Corp.

Londonderry, NH • Ft. Lauderdale, FL

General Inquiries: 1-866-330-2725
Technical Support: 1-866-330-2730

www.boschheatingandcooling.com



About **Bosch**

The Bosch Group has been a leading global supplier of technology and services in the areas of Automotive, Industrial Technology, Consumer Goods and Building Technology for over 100 years. Every Bosch product is built with one goal in mind; to enhance the quality of life by providing innovative technological solutions. Bosch is a leader in the development of next generation technologies that deliver improved performance and peace of mind while conserving and sustaining natural resources

Bosch Thermotechnology in North America

Bosch Thermotechnology is a leading source of high quality water heating and comfort heating systems in North America. The company offers both residential and commercial solutions under the Bosch, Buderus and FHP brands. The Bosch line included tankless and point-of-use water heaters, solar thermal systems, wall-mounted boilers, heat pump water heaters and geothermal heat pumps. Buderus products include wall-mounted and floor-standing boilers, solar thermal solutions, indirect DHW tanks, and panel radiators. FHP branded products include ground source heat pumps for commercial applications. All brand offer controls and accessories. Bosch Thermotechnology is committed to reinventing energy efficiency by offering smart products that work together as integrated systems, which enhance quality of life in an ultra efficient and environmentally friendly manner.